

Appln. No. 10/763,734
Amendment dated February 26, 2009
Reply to Office Action mailed December 3, 2008

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims (deleted text being struck through and added text being underlined):

1. (Currently Amended) A method of creating a virtual disk storage construct using disk storage consolidated from at least two grid computers of a computing grid utilizing a connecting network, comprising:
 - loading an agent application onto at least one grid computer of the at least two grid computers;
 - locating, by the agent application, an unused portion of a total disk storage space on ~~a disk drive of~~ the at least one grid computer connected by the connecting network of the computing grid;
 - receiving, by the agent application on the at least one grid computer, designation of a minimum amount of disk storage space to be reserved on ~~the disk drive of~~ the at least one grid computer for local use by a local user;
 - allocating, by the agent application, a reserved portion of the total disk storage space on the at least one grid computer to local use by the local user, the reserved portion of the total disk storage space on the at least one grid computer including the minimum amount of disk storage space designated by the local user to be reserved for local use by the local user;
 - allocating, by the agent application, at least a portion of the total disk storage space on the at least one grid computer to be made available for use by users of the computing grid, the available portion excluding the reserved portion so that the reserved portion of the total disk storage space is not available for use by users of the computing grid;
 - presenting, as a single combined virtual storage drive on at least one computer, ~~[[[a]]] the available portion of the unused portion of the total~~ disk storage space from the disk drive of each of the at least two grid computers; and
 - monitoring, by the agent application, the at least one grid computer

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for activity indicating that additional disk storage space has been added to the at least one grid computer;

wherein said designation of the minimum amount of total disk storage space to be reserved is made at the at ~~least one~~ least one grid computer subject to the disk storage space reservation by the local user of the at least one grid computer ~~and the minimum amount of disk storage space is not available for use by users of the computing grid.~~

2. (Original) The method of claim 1 additionally including allocating a portion of the total disk storage space on each of the at least two grid computers to be made available as part of the virtual storage drive.

3. (Currently Amended) The method of claim 2 ~~additionally including wherein allocating a reserved portion of the total disk storage space includes~~ reserving a portion of predetermined size of the total disk storage space on the at least one grid computer, ~~said reserved portion of the disk drives including the minimum amount of disk storage space designated by the local user that is reserved for local use on the at least one grid computer.~~

4. (Currently Amended) The method of claim 1 additionally including determining by the agent application the total disk storage space on each of the at least one grid computer ~~and allocating the total disk storage space between a portion made available for use as part of the virtual storage drive and a portion reserved for local use on the at least one grid computer including the minimum amount of free disk storage space designated by the local user that is reserved for local use on the at least one grid computer; and~~

wherein the portion available for use as part of the virtual storage space is of a fixed size and the reserved portion ~~reserved~~ for local use on the grid computer is of a fixed size, the size of the portion reserved for local use being fixed by the local user through the designation of the

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minimum amount of free disk storage space.

5. (Original) The method of claim 1 additionally including maintaining a table of grid computers contributing storage space to the virtual storage drive and corresponding amounts of storage space made available by each contributing grid computers.

6. (Cancelled)

7. (Previously Presented) The method of claim 27 additionally including reallocating disk storage space on the at least one grid computer by the agent application after detecting activity indicating that additional storage space has been added to the at least one grid computer.

8. (Currently Amended) A method of creating a virtual disk storage construct using disk storage consolidated from at least two grid computers of a computing grid utilizing a connecting network, comprising:

loading an agent application onto at least one grid computer of the at least two grid computers;

locating, by the agent application, an unused portion of a total disk storage space on ~~a disk drive of~~ the at least one grid computer connected by the connecting network of the computing grid;

~~presenting, as a single combined virtual storage drive on at least one computer, a portion of the unused portion of the disk storage space from the disk drive of each of the at least two grid computers;~~

receiving, by the agent application on the at least one grid computer, designation of a minimum amount of disk storage space ~~on the disk drive of the at least one grid computer~~ to be reserved on the total disk drive storage space of the at least one grid computer for local use by a local user, ~~the designated minimum amount of disk storage space being excluded from inclusion in the single combined virtual storage drive;~~

allocating, by the agent application, a reserved portion of the total

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disk storage space on the at least one grid computer to local use by the local user, the reserved portion of the total disk storage space on the at least one grid computer including the minimum amount of disk storage space designated by the local user to be reserved for local use by the local user;

allocating, by the agent application, at least a portion of the total disk storage space on the at least one grid computer to be made available for use by users of the computing grid, the available portion excluding the reserved portion so that the reserved portion of the total disk storage space is not available for use by users of the computing grid;

presenting, as a single combined virtual storage drive on at least one computer, the available portion of the total disk storage space from the disk drive of each of the at least two grid computers;

monitoring, by the agent application on the at least one grid computer, for activity indicating that the minimum amount of reserved disk storage space of the total disk storage space on the one grid computer has not been maintained; and

reallocating, by the agent application, disk storage space on the at least one grid computer for use by local applications after detecting activity indicating that the minimum amount of reserved disk storage space has not been maintained in order to restore at least the minimum amount of reserved disk storage space designated by the local user;

wherein said designation of the minimum amount of disk storage space to be reserved is made at the at least one grid computer subject to the disk storage space reservation by the local user of the at least one grid computer.

9. (Cancelled)

10. (Currently Amended) The method of claim 1 additionally including providing a safe area on the available portion of the disk storage space of the ~~virtual storage drive~~ at least one grid computer, the safe area being kept free of data.

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11. (Currently Amended) The method of claim 1 additionally including loading the agent application on each of the at least two grid computers for managing the available portion of the ~~unused portion~~ of the total disk storage space on the grid computer ~~made available~~ for the virtual storage drive.

12. (Currently Amended) The method of claim 4 additionally comprising copying data from the reserved portion of the total disk storage space of the at least one ~~of the grid computers~~ computer to an available portion of another one of the at least two ~~other~~ grid computers of the computing grid that ~~have~~ has been made available to the virtual storage drive to thereby backup the copied data from the reserved portion of the at least one grid computer.

13. (Currently Amended) A computer readable medium tangibly embodying a program of instructions implementing the following method of creating a virtual disk storage construct using disk storage consolidated from at least two grid computers of a computing grid utilizing a connecting network:

loading an agent application onto at least one grid computer of the at least two grid computers;

locating, by the agent application, an unused portion of a total disk storage space on ~~at least one disk drive of the~~ at least one grid computer of the at least two grid computers connected by the connecting network of the computing grid;

receiving by the agent application on the at least one grid computer, designation of a minimum amount of disk storage space to be reserved on the disk drive of the at least one grid computer for local use by a local user;

~~allocating a portion of the total disk storage space on each of the at least two grid computers to be made available as part of the virtual storage drive;~~

~~reserving a portion of the total disk storage space on the at least grid~~

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~~computer, said reserved portion of the total disk storage space on the at least one grid computer including the minimum amount of disk storage space designated by the local user as being reserved for local use on the at least one grid computer of the at least two grid computers;~~

allocating, by the agent application, a reserved portion of the total disk storage space on the at least one grid computer to local use by the local user, the reserved portion of the total disk storage space on the at least one grid computer including the minimum amount of disk storage space designated by the local user to be reserved for local use by the local user;

allocating, by the agent application, at least a portion of the total disk storage space on the at least one grid computer to be made available for use by users of the computing grid, the available portion excluding the reserved portion so that the reserved portion of the total disk storage space is not available for use by users of the computing grid.; and

presenting, on at least one computer, ~~[[[a]]]~~ the available portion of the unused portion of the total disk storage space of each of the at least two grid computers as a single combined virtual storage drive;

wherein said designation of the minimum amount of disk storage space to be reserved is made at the at least one grid computer subject to the disk space reservation by the local user of the at least one grid computer ~~and the minimum amount of disk storage space is not available for use by users of the computing grid.~~

14. (Cancelled)

15. (Cancelled)

16. (Previously Presented) The computer readable medium of claim 13 additionally comprising monitoring the at least one grid computer by the agent application for activity indicating that additional disk storage space has been added to the at least one grid computer.

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17. (Previously Presented) The computer readable medium of claim 13 additionally comprising monitoring the at least one grid computer by the agent application for activity indicating that a minimum amount of free disk storage space of the total disk storage space on the grid computer has not been maintained.

18. (Currently Amended) The computer readable medium of claim 13 additionally ~~implementing the step of comprising~~ providing a safe area ~~on in the available portion of the total disk storage space of the virtual storage drive,~~ the safe area being kept free of data.

19. (Currently Amended) The computer readable medium of claim 13 additionally ~~implementing the step of comprising~~ copying data from ~~[[[a]]]~~ the reserved portion of the disk storage space of at least one of the grid computers to an available portion of at least two other grid computers of the computing grid that have been made available to the virtual storage drive to thereby backup the copied data from the reserved portion of the at least one grid computer.

20. (Cancelled)

21. (Currently Amended) A method of creating a virtual disk storage construct using disk storage consolidated from at least two grid computers of a computing grid utilizing a connecting network, comprising:
loading an agent application onto at least one grid computer of the at least two grid computers;
locating, by the agent application, an unused portion of a total disk storage space on ~~at least one disk drive of the~~ at least one grid computer of the at least two grid computers connected by the connecting network of the computing grid;
receiving, by the agent application on the at least one grid computer, designation of a minimum amount of disk storage space to be reserved on

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~~the disk drive of the at least one grid computer for local use by a local user;~~

~~presenting, on at least one computer, a portion of the unused portion of the total disk storage space of each of the at least two grid computers as a single combined virtual storage drive;~~

~~determining, by the agent application, the total disk storage space on the at least grid computer and allocating by the agent application the total disk storage space on the at least one grid computer between a portion made available for use as part of the virtual storage drive and a portion reserved for local use on the grid computer;~~

~~allocating a portion of the total disk storage space on each of the at least two grid computers to be made available as part of the virtual storage drive;~~

allocating, by the agent application, a reserved portion of the total disk storage space on the at least one grid computer to local use by the local user, the reserved portion of the total disk storage space on the at least one grid computer including the minimum amount of disk storage space designated by the local user to be reserved for local use by the local user;

allocating, by the agent application, at least a portion of the total disk storage space on the at least one grid computer to be made available for use by users of the computing grid, the available portion excluding the reserved portion so that the reserved portion of the total disk storage space is not available for use by users of the computing grid.

wherein allocating a reserved portion of the total disk storage space includes reserving a portion of predetermined size of the total disk storage space on each of the at least two grid computers, said reserved portion of the disk drives including the minimum amount of disk storage space designated by the local user that is reserved for local use on the at least one grid computer;

presenting, on at least one grid computer, the available portion of the total disk storage space of each of the at least two grid computers as a single combined virtual storage drive;

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maintaining a table of grid computers contributing storage space to the virtual storage drive and corresponding amounts of storage space made available by each contributing grid computers;

monitoring, by the agent application, the at least one grid computer for activity indicating that additional disk storage space has been added to the at least one grid computer, and reallocating, by the agent application, disk storage space on the at least one grid computer if the agent application detects activity indicating that additional storage space has been added to the at least one grid computer;

monitoring, by the agent application, the at least one grid computer for activity indicating that a minimum amount of free disk storage space of the total disk storage space on the at least one grid computer has not been maintained, and reallocating, by the agent application, disk storage space on the at least one grid computer for use by local applications if the agent application detects activity indicating that the minimum amount of free disk storage space has not been maintained in order to restore at least the minimum amount of free disk storage space;

providing a safe area on disk storage space of the virtual storage drive, the safe area being kept free of data; and

copying data from the reserved portion of the disk storage space of at least one of the grid computers to an available portion of at least two other grid computers of the computing grid that have been made available to the virtual storage drive to thereby backup the copied data from the reserved portion of the at least one grid computer;

wherein said designation of the minimum amount of disk storage space to be reserved is made at the at least one grid computer by the local user of the at least one grid computer and the minimum amount of disk storage space is not available for use by users of the computing grid.

22. (Cancelled)

23. (Cancelled)

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24. (Cancelled)

25. (Currently Amended) The method of claim [[[27]]] 1 wherein monitoring includes determining that a total disk storage space on the at least one grid computer has been increased when the agent application detects the addition of a disk drive to the at least one grid computer.

26. (Cancelled)

27. (Previously Presented) The method of claim 1 additionally including detecting, by the agent application, activity on the at least one grid computer indicating that additional storage space has been added to the at least one grid computer.

28. (Currently Amended) The method of claim 1 wherein the ~~local user of the at least one grid computer is not an administrative entity of the computing grid~~ reserved portion of the total disk storage space of the at least one grid computer is not available for use as a part of the virtual storage drive.

29. (New) The method of claim 27 additionally comprising determining a total disk storage space including the additional storage space detected, reallocating the reserved portion and the available portion of the total disk storage space, and communicating information regarding the reallocated portions of the total disk storage space for inclusion of the available portion as a part of the single combined virtual disk storage drive